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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :
RALF FINK, ET AL. : EXAMINER: SELLMAN, C. I.
SERIAL NO: 10/501,072 :
FILED: JULY 9, 2004 : GROUP ART UNIT: 1792
FOR: RADIATION-CURABLE :
COATINGS FEATURING IMPROVED
ADHESION

REPLY BRIEF

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

In reply to the Examiner's Answer mailed April 30, 2010, please reconsider the application in view of the following remarks. The Examiner has maintained the grounds of rejection as follows:

(A) Claims 7-8, 10, 19-20 and 22 stand rejected under 35 U.S.C. § 102(b) as anticipated by Tsuchiko (JP 6302081, abstract).

(B) Claims 9, 11, 17-18, 24-25 and 27 stand rejected as being obvious under 35 U.S.C. §103 (a) over Tsuchiko in view of Akiyama (JP 2002309185, abstract).

(C) Claims 23, 28-29 stand rejected as being obvious under 35 U.S.C. §103 (a) over Tsuchiko in view of Kamiya (JP 11228926, abstract).

Withdrawal of these rejections is requested.

Applicants note that the rejections are based on the abstracts. The Examiner is requested to consider the references in their entirety and provide a translation. In this context, Applicants wish to draw the Examiners' attention to MPEP 706.02.II.

“Citation of and reliance upon an abstract without citation of and reliance upon the underlying scientific document is generally inappropriate where both the abstract and the underlying document are prior art. See *Ex parte Jones*, 62 USPQ2d 1206, 1208 (Bd. Pat. App. & Inter. 2001) (unpublished). To determine whether both the abstract and the underlying document are prior art, a copy of the underlying document must be obtained and analyzed. If the document is in a language other than English and the examiner seeks to rely on that document, a translation must be obtained so that the record is clear as to the precise facts the examiner is relying upon in support of the rejection. The record must also be clear as to whether the examiner is relying upon the abstract or the full text document to support a rejection.”

If the rejections are based on the full translations, the Examiner is requested to state so on the record.

Further, the Examiner states at page 6 of the Examiner's Answer that the claims do not state that the radiation-curable composition (I) and the pressure sensitive adhesive (II) cannot be the same material and that the composition as a whole with the acrylic resin and other components is a radiation-curable pressure sensitive adhesive. Applicants disagree.

The Examiner states that the acrylic polymer of Tsuchiko can be crosslinked using UV. In this context, she also refers to US 2001/0023264 (Yamamoto), para. 0029; US 2002/0037413 (Kishioka et al), para. 0027 and US 6,844,034 (Touhsaent), col. 5, lines 22-37 as evidentiary references. (See the paragraph bridging pages 4 and 5 of the Office Action dated June 11, 2009.) However, in the first additional reference (Yamamoto), the acrylic polymers are reacted with methacryloyloxyethyl isocyanate to yield a reactive acrylic polymer. The second reference (Kishioka et al) describes an acrylic polymer in combination with a UV absorber. Further, the third reference (Touhsaent) describes that an epoxy acrylate

is added because it has reactive acrylic double bonds which can react with double bonds in inks that are UV curable. So in each case, specific UV curable double bonds have to be added in one form or another.

Further, contrary to the Examiners' statement, Yamamoto (US 2001/0023264) does not provide a disclosure or suggestion that all polyacrylates are crosslinkable by UV radiation. In fact in Yamamoto the phrases "acrylic polymer" vs. "reactive polymer" are used, see e.g. paragraph [0020], in which the phrase "acrylic polymer" denotes polymers or copolymers obtained by radical polymerization, see paragraphs [0019] and [0020].

However, a polymer which was obtained by a radical polymerization does not contain any reactive acrylic groups anymore, since these reactive groups reacted during the polymerization. Therefore, a polymer without radically polymerizable groups is obtained, which, of course, cannot further be crosslinked by UV exposure, as it lacks reactive groups.

In order to make these acrylic polymers reactive towards radicals (which are obtained by irradiation of photoinitiators with UV light) reactive groups have to be introduced into these polymers, as done in Example 2. In Example 2 an acrylic polymer bearing hydroxy groups in side chains is reacted with acryloyloxyethyl isocyanate, the isocyanate group reacts with the hydroxy group and, hence, a (radically polymerizable) acryloyl groups is coupled to the acrylic polymer which renders the polymer a "reactive polymer", namely reactive towards radical polymerization, whereas the radicals are provided by the photo initiator upon UV exposure.

Thus, the Examiners' statement (that every acrylic polymer is an acrylic adhesive which is crosslinkable by active radiant energy) with all due respect, is incorrect. In contrast, only those acrylic polymers which bear reactive groups, are crosslinkable in such a way.

Therefore, Yamamoto fails to support the rejection over Tsuchiko.

The acrylic polymers according to Kishioka et al. (US 2002(0037413) (US 2002(0037413) do not bear any reactive groups but need a crosslinker, as pointed out in paragraph [0025] and in the examples, in which polyisocyanates are used as crosslinkers.

Therefore, firstly Kishioka et al., do not disclose adhesives according to the claims of the present invention, which must not require additional compounds as curing agents, and secondly the adhesives according to Kishioka et al. are not crosslinkable by active radiant energy.

Therefore, Kishioka et al. fails to support the rejection over Tsuchiko.

The same is true for Touhsaent (US 6,844,034). The acrylic polymers described in col. 4, line 33 et seq. require a crosslinker, as pointed out in col. 4, line 58 et seq. and col. 5, line 1 et seq.

Therefore, firstly Touhsaent do not disclose adhesives according to the claims of the present invention, which must not require additional compounds as curing agents, and secondly the acrylic polymers according to Touhsaent are not crosslinkable by active radiant energy.

Therefore, Touhsaent fails to support the rejection over Tsuchiko.

The abstract of Tsuchiko (JP 63-0203811) discloses that a radiation-curable pressure sensitive adhesive composition (B) is obtained by mixing

- a thermoplastic resin (a), preferably an acrylic polymer,
- a compound (b) having one ethylenically unsaturated double bond,

- a compound (c) having at least two ethylenically unsaturated double bonds, and
- a photopolymerization initiator (d).

The adhesive (II) according to the present invention has to be crosslinkable by active radiant energy. A simple acrylic polymer as in Tsuchiko, e.g. a polyacrylate, does not have any polymerizable groups. Hence, the acrylic resin according to Tsuchiko cannot be crosslinkable by active radiant energy.

Further, an acrylic resin is not necessarily an adhesive, this is a question of the glass transition temperature T_g of this resin (see e.g. Claim 20). However, the abstract of Tsuchiko is silent about the T_g. Thus, there is no support for equating the thermoplastic resin (a) of Tsuchiko with the pressure sensitive adhesive (II) according to the invention. Therefore, the present invention is not anticipated by Tsuchiko.


Akiyama (JP 2002309185, abstract) and Kamiya (JP 11228926, abstract) do not cure the defects of Tsuchiko.

CONCLUSION

For the above reasons, it is respectfully requested that all the rejections still pending be REVERSED.

Respectfully submitted,

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